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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/535,696	03/27/2000	Scott Arthur Jones	10001011-1	4175

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EXAMINER	
PHAN, MAN U	

ART UNIT	PAPER NUMBER
2665	

DATE MAILED: 09/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/535,696	JONES ET AL.	
	Examiner	Art Unit	
	Man Phan	2665	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 June 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4 and 16-18* is/are rejected.

7)☒ Claim(s) *5-15* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

OFFICE ACTION

1. This communication is in response to applicant's 06/14/2004 response in the application of Jones et al. for a "Method and system for transmitting data between a receiver and a transmitter" filed 03/27/2000. The amendment and response has been entered and made of record. Claims 1-18 are pending in the application.

Remarks

2. Applicant's response and argument with regard to the rejection under 35 USC 103 have been considered but are moot in view of the new ground(s) of rejection, and will be examined as discussed below. Furthermore, the rejections of record under 35 U.S.C. ' 103 of the claims are withdrawn in view of the newly additional reference to Monin (US#6,243,358). Accordingly, This action is made Non-Final. Rejections based on the newly cited references follows:

Claim Objections

3. Claim 17 is objected to because of the following informalities: It's an apparatus claim, and "A system" on line 1 should read –An apparatus–

Appropriate correction is required.

4. Claim 17 is objected to because of the following informalities:

The claim contains the phrase "adapted to" in lines 5, 9, and 11. It has been held that the recitation that an element is "adapted to" perform a function is not a positive limitation but only requires the ability to so perform. It does not constitute a limitation in any patentable sense. In re Hutchison, 69 USPQ 138. Appropriate correction is required.

Claim Rejections - 35 USC ' 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 1038 and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 1-4 and 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Monin (US#6,243,358) in view of Sugawara (US#5,852,602).

With respect to claims 1, 16, 17, both Monin and Sugawara disclose a method and system for permissible transmission in virtual channel credit packet according to the essential features of the claims. Monin (US#6,243,358) discloses a process for allocating resources in a packet transmission. The principle of flow control based on allocating credits is as follows: a sender is prohibited from transmitting data so long as it has not received from the receiver the indication that the receiver is able to accommodate them. To do this, the receiver regularly dispatches packets of credits to the sender, containing information about its capacity to receive data. The number of "credits" transported by *each packet of credits dispatched by the receiver to the sender corresponds, for each virtual input channel of the sender*, to the number of unoccupied slots in an input buffer register assigned to this virtual channel. Various algorithms for managing credits have been proposed. Reference can be made for example to the article by H. T. Kung et al., "Credit-based flow control for ATM networks: credit update protocol, adaptive credit allocation and statistical multiplexing", ACM 1994 (Col. 1, lines 30 plus). Fig. 1 illustrated a process for allocating resources in a packet transmission digital network, in which (a) the receiver node dispatches to the sender node packets of credit containing information about the capacity of the receiver node to receive data packets originating

from said sender node; (b) the sender node dispatches the data packets which are to be transmitted so long as it has sufficient credits (Col. 2, lines 8 plus and Col. 6, lines 35 plus). Monin further teaches the unique VC which is part of the credit packet that is sent by the receiver; in which the receiver 14 (*one input buffer 20 per virtual channel*) includes a module 22 (Fig. 2) intended for monitoring the fill level of the buffers 20 and a sender 23 intended for constructing "credit" packets and rejection detection packets DR and for dispatching them to the sender 10 over the link 12. *Each credit packet contains, for each virtual channel, the identification of the number of packets which it can accept,* for example by giving the highest number of the packet which it is ready to receive over this virtual channel (*the receiver specifies the unique VC*). In a network of known type which uses the credit allocation approach, the sender is authorized to send data packets corresponding to a specified virtual channel if it has not exhausted the number of credits which it has received from the receiver. To do this, the sender includes a memory into which the credits originating from the receiver are loaded and which is decremented as and when packets are sent. Thus, the receiver is certainly able to forward, to local users or onto downstream outputs, the data packets which arrive (*the sender is constructed so as to be able to dispatch data packets relating to a specified virtual channel although it has exhausted the credits corresponding to this virtual channel*) (Col. 4, lines 50 plus). It has become common to utilize the flow-control mechanisms to reduce congestion in the packet communications network. Such mechanism pre-allocate receiver (*receiver side*) buffer credits to packet source and notify the corresponding sender (*transmitter side*) as to how much data can be sent.

In the same field of endeavor, Sugawara (US#5,852,602) discloses a method and system for controlling credit packet in an ATM communication apparatus which transfers data by flow control using credit information. Sugawara teaches in Figs. 4A&B the flow charts illustrated the operation of a credit control method and system, *an initial credit value is sent from a receiving-side to a sending-side prior to transferring a packet.* Transfer of a packet is started on the sending-side when this credit value is received. On the receiving-side, a new credit value is calculated when the packet is received, and the same number of packets as the number indicated by the calculated new credit value are received and processed. A new credit value is sent to the sending-side whenever receiving buffers whose number equals the preceding new credit value are emptied. On the sending-side, the sum of the new credit value and the initial credit value, whenever the new credit value is received, is stored as a credit value indicating the number of successively transmittable packets (Col. 2, lines 46 plus; Col. 11, lines 49 plus)

Regarding claims 2, 18, Monin teaches that the virtual channel credit packet is sent when the receiver has the available resources to receive transmission data from the transmitter and is ready to do so *(the receiver has its capacity to receive data)* (Col. 1, lines 30 plus and Col. 6, lines 6 plus).

Regarding claims 3, 4, Monin teaches that the data includes the unique virtual channel number assigned to the particular virtual channel (See Fig. 1; Col. 3, lines 7 plus and Col. 4, lines 50 plus).

One skilled in the art would have recognized the need for effectively and efficiently allocating resources in a packet network, and would have applied Sugawara's teaching of

the initial credit value using credit information from the receiver side into Monin's novel use of the flow control process for allocating resource in a packet transmission digital network. Therefore, It would have been obvious to a person of ordinary skill in the art at the time of the invention was made to apply Sugawara's credit control method and system for ATM communication apparatus into Monin's process and device for allocating resources in a packet transmission digital network with the motivation being to provide a method and system for resources allocation in packet network communications devices.

Allowable Subject Matter

8. Claims 5-14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9. The following is an examiner's statement of reasons for the indication of allowable subject matter: The closest prior art of record fails to disclose or suggest wherein prior to the step of the receiver/transmitter sending/responding a virtual channel credit packet, further comprising the steps of: the receiver/transmitter checking for available buffer for transmission; the receiver/transmitter waiting for a predetermined time if no buffer is available; and the receiver/transmitter sending/responding the virtual channel credit packet for the specific virtual channel once a buffer is available, as specifically recited in claims 5, 7 and 14.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The Lauer (US#5,528591) is cited to show the end-to-end credit-based flow control system in a digital communication network.

The Zheng (US#5,515,359) is cited to show the credit enhanced proportional rate control system.

The Zheng et al. (US#5,432,824) is cited to show the credit/rate-based system for controlling traffic in a digital communication network.

The Barkey et al. (US#5,825,748) is cited to show the credit-based flow control checking and correction system.

The Futral. (US#6,747,949) is cited to show the register based remote data flow control.

The Forin (US#6,594,701) is cited to show the credit-based method and systems for controlling data flow between a sender and a receiver with reduced copying data.

The Sugawara (US#6,011,797) is cited to show the ATM communication device using interface signal HIPPI.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to M. Phan whose telephone number is (571) 272-3149. The examiner can normally be reached on Mon - Fri from 6:00 to 3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu, can be reached on (571) 272-3155. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-2600.

12. **Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to: (703) 305-9051, (for formal communications intended for entry)

Or: (703) 305-3988 (for informal or draft communications, please label "PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2021 Crystal Drive, Arlington. VA., Sixth Floor (Receptionist).

Mphan

09/17/2004

MAN U. PHAN
PRIMARY EXAMINER